

CLAIMS

1. A plasma display panel provided with a pair of substrates disposed opposedly to form a discharge space therebetween, a plurality of band-like barrier ribs arranged in parallel on one of the substrates on a rear or front side to partition the discharge space, and fluorescent layers provided in elongated grooves between the barrier ribs,
- 5 the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough to increase a formation area of the fluorescent layers are provided in the elongated grooves between the barrier ribs and the fluorescent layers are formed in the grooves including the wall-like projections between the barrier ribs.
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2. The plasma display panel as set forth in claim 1, characterized in that the wall-like projections are provided in a direction crossing the barrier ribs.
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3. The plasma display panel as set forth in claim 2, characterized in that the substrate on the front side has a plurality of electrode pairs disposed in parallel in the direction crossing the barrier ribs and the wall-like projections are provided in locations corresponding to non-discharge regions
- 20 between adjacent electrode pairs.
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4. The plasma display panel as set forth in claim 2,

characterized in that the substrate on the front side has a plurality of electrode pairs disposed in parallel in the direction crossing the barrier ribs and the wall-like projections are provided in locations corresponding to discharge regions where
5 the electrode pairs exist.

5. The plasma display panel as set forth in claim 1, characterized in that the wall-like projections are provided parallel to the barrier ribs.

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6. The plasma display panel as set forth in claim 1, characterized in that the wall-like projections comprises first projections provided in a direction crossing the barrier ribs and second projections provided parallel to the barrier ribs.

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7. A surface discharge type plasma display panel provided with a discharge space formed between a front substrate and a rear substrate, the front substrate having a plurality of display electrode pairs in each of which electrodes
20 are disposed at an interval of a discharge slit for surface discharge, the display electrode pairs being disposed in parallel at spaced intervals of reverse slits where discharge is not generated, the rear substrate having a plurality of address electrodes in a direction crossing the display electrode pairs,
25 band-like barrier ribs provided between adjacent address electrodes and fluorescent layers provided between adjacent barrier ribs,

the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough to increase a formation area of the fluorescent layers are provided between adjacent barrier ribs on the rear surface in locations corresponding to the non-discharge reverse slits on the front substrate, and the fluorescent layer are formed between the barrier ribs to cover the wall-like projections.

8. The plasma display panel as set forth in any one of claims 1 to 7, characterized in that surfaces of the wall-like projections are formed to be light reflective faces.

9. A plasma display panel, characterized by comprising:
a pair of substrates disposed opposedly to form a discharge space therebetween,

a plurality of barrier ribs in stripes arranged in parallel on either one of the substrates to partition the discharge space,

and wall-like projections lower than the barrier ribs provided in elongate grooves between the barrier ribs.

10. The plasma display panel as set forth in claim 9, characterized in that surfaces of the wall-like projections are formed to be light reflective faces.

11. The plasma display panel as set forth in claim 9 or 10,

characterized in that fluorescent layers are formed in the grooves between the barrier ribs to cover the projections.

12. The plasma display panel as set forth in claim 9,
5 characterized in that fluorescent layers are formed in the elongate grooves between the barrier ribs and the projections are formed of a material of the fluorescent layers.

13. A surface discharge type plasma display panel
10 provided with a discharge space formed between a front substrate and a rear substrate, the front substrate having a plurality of display electrode pairs in each of which electrodes are disposed at an interval of a discharge slit for surface discharge, the display electrode pairs being disposed in
15 parallel at spaced intervals of reverse slits where discharge is not generated, the rear substrate having a plurality of address electrodes in a direction crossing the display electrode pairs and band-like barrier ribs provided between adjacent address electrodes,

20 the plasma display panel being characterized in that wall-like projections lower than the barrier ribs are provided between adjacent barrier ribs on the rear surface in locations corresponding to the non-discharge reverse slits on the front substrate.

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14. A method for fabricating a plasma display panel as recited in claim 1, comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

forming a first photosensitive material layer on a
5 substrate;

disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure;

without development, forming a second photosensitive material layer on the first photosensitive material layer;

10 disposing thereon a photolithographic mask having a pattern of the barrier ribs, followed by exposure and development, thereby producing a master having the wall-like projections and the barrier ribs formed on the substrate; and

producing a transfer mold using the master, filling a
15 barrier rib material in concaves of the transfer mold and transferring the barrier rib material onto the substrate for the plasma display panel, or

producing a pressing mold using the master, pressing a barrier rib material on the substrate for the plasma display
20 panel,

thereby forming the wall-like projections and the barrier ribs.

15. A method for fabricating a plasma display panel as
25 recited in claim 1, comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side

of the plasma display panel,

forming a barrier rib pattern of a light-tight material
on a light-transmissive substrate;

forming thereon a first photosensitive material layer;

5 disposing thereon a photolithographic mask having a
pattern of the wall-like projections, followed by exposure;

without development, forming a second photosensitive
material layer on the first photosensitive material layer;

exposing the resulting substrate from a rear surface
10 thereof, followed by exposure, thereby producing a master
having the wall-like projections and the barrier ribs formed on
the substrate; and

producing a transfer mold using the master, filling a
barrier rib material in concaves of the transfer mold, and
15 transferring the barrier rib material onto the substrate for the
plasma display panel, or

producing a pressing mold using the master and
pressing a barrier rib material on the substrate for the plasma
display panel,

20 thereby forming the wall-like projections and the
barrier ribs.

16. A method for fabricating a plasma display panel as
recited in claim 1, comprising:

25 in the formation of the wall-like projections and the
barrier ribs on one of the substrates on the rear or front side
of the plasma display panel,

forming a convex of a sandblast-resistant material on the substrate;

thereafter forming a barrier rib material layer of good sandblastability on the entire substrate;

5 forming thereon a sandblast-resistant pattern using a photolithographic technique; and

sandblasting the barrier rib material layer via the pattern,

10 thereby forming the wall-like projections and the barrier ribs.

17. A method for fabricating a plasma display panel as recited in claim 1, comprising:

15 in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

forming first wall-like projections and second wall-like projections having the same height and crossing each other on the substrate, and

20 forming projections on either one of the first and second wall-like projections to the height of the barrier ribs,

thereby forming the wall-like projections and the barrier ribs.

25 18. A method for fabricating a plasma display panel as recited in claim 1, comprising:

in the formation of the wall-like projections and the

barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

forming a first photosensitive barrier rib material layer on the substrate;

5 disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure;

without development, forming a second photosensitive barrier rib material layer on the first photosensitive barrier rib material layer; and

10 disposing thereon a photolithographic mask having a pattern of the barrier ribs, followed by exposure and development,

thereby forming the wall-like projections and the barrier ribs.

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19. A method for fabricating a plasma display panel as recited in claim 1, comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

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forming a pattern of the barrier ribs of a light-tight material on a light-transmissive substrate;

forming thereon a first photosensitive barrier rib material layer;

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disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure;

without development, forming a second photosensitive

barrier rib material layer on the first photosensitive barrier rib material layer; and

performing exposure from a rear face of the substrate, followed development,

5 thereby forming the wall-like projections and the barrier ribs.

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20. A method for fabricating a plasma display panel as recited in claim 9, characterized in that the projections are
10 formed by a process comprising: forming a projection material layer on one substrate; forming thereon a masking pattern for the projections of a sandblast-resistant material; forming thereon a barrier rib material layer; forming thereon a masking pattern for the barrier ribs of a sandblast-resistant material;
15 and forming the projections and the barrier ribs simultaneously by one sandblasting.

21. A method for fabricating a plasma display panel as recited in claim 9, characterized in that the projections are
20 formed by a process comprising: applying a projection material through a nozzle onto boundary areas between discharge cell areas in the elongate grooves between the barrier ribs on one substrate on which the barrier ribs are formed.

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25 22. The method for fabricating a plasma display panel as set forth in claim 21, characterized in that the projection material comprises a fluorescent substance paste.